APPENDIX

APPENDIX

Pathology Reports

Induced abortion is not without risks of serious, even life-threatening complications. Pathological examinations can reduce these risks. The purpose of this Appendix is to describe certain abortion-related complications and to note how pathological examinations can maximize the woman's safety by detecting these complications before serious injury or death occurs.

Abortion related complications can be grouped into three broad categories: immediate complications that develop during or within three hours of the abortion, delayed complications that develop thereafter and up to 28 days, and late complications occurring after 28 days. Grimes & Cates, Jr., *abortion: methods and complications*, in Humman Reproduction 796, 800 (1980).

1. Immediate complications.

a. Uterine perforation. Perforation is a common complication in dilatation and curettage (D & C) and dilatation and evacuation (D & E) abortions. McDonald & Aaro, *Medical Complications of Induced Abortion*, 67 S. Med. J. 560, 561 (1974). Perforation can occur during the forcible dilatation (widening) of the cervix or during the curettage (scraping) and removal of the uterine contents. A dilator or curette may pierce the cervical or uterine lining and enter the bowels or the bladder, in the latter case causing extensive urologic complications. Watson, *Urologic Complications of Legal Abortion*, in New Perspectives on Human Abortion 135 (1981). In one case, for example, the physician not only removed the uterine contents, but also took over 17 centimeters of the woman's ureter. The

physician recalled removing an elongated tube, but assumed it was part of the umbilical cord. Gangai, *An Unusual Surgical Injury to the Ureter*, 109 J. Urology 32 (1973). A pathological exam would have identified the elongated tube as part of the woman's ureter and enabled the physician to prevent the extensive bleeding that eventually occurred.

Perforation can occur in suction abortions as well. In suction abortions, the cervix is dilated, an aspirator inserted into the womb, and a powerful vacuum is created. As a result, the uterine contents are sheared from the uterine walls and sucked through the aspirator. Sometimes the vacuum may be placed too close to the wall of the bladder, which is then punctured by the abrupt suction force. In one reported suction abortion, the physician recalled seeing during suction a sudden gush of clear, yellow fluid which he assumed to be amniotic fluid but which was actually maternal urine. The patient was taken to the recovery room after the abortion in satisfactory condition, but soon thereafter was found in shock. Rous, Major & Bordon, *Rupture of the bladder secondary to uterine vacuum curettage: A case report and review of the literature*, 106 J. Urology 685 (1971). A pathologist would have detected maternal bladder lining tissue in the aspirated material, thereby allowing immediate treatment of the woman's injury.

b. Cervicovaginal fistula. This complication can occur in abortions done by amnio-instillation. Instillation abortions are performed by first removing amniotic fluid and then injecting saline, glucose or prostaglandin solutions into the amniotic sac. Each of these substances induces contractions and eventual fetal expulsion. Cervicovaginal fistula formation occurs when the cervix fails to dilate sufficiently during the contractions. Because the fetus cannot

exit through the narrow opening between the uterus and cervix, he or she is pushed through the cervical wall, thereby creating a false passage (fistula) into the vagina. Gordon, *Cervicovaginal fistula as a result of saline abortion,* 112 Am. J. Obstet. Gynecol. 578 (1972). An unrecognized cervicovaginal fistula jeopardizes the successful outcome of future pregnancies since it encourages spontaneous abortion and premature labor. *Id.* at 579. Cervicovaginal fistula formation can also be fatal. Grimes & Cates, Jr., *Fatal uterine rupture during oxytocin-augmented saline abortion,* 130 Am. J. Obstet. Gynecol. 591 (1978). Detection of cervicovaginal tissue among the products of conception examined for a pathological report would alert a physician to the possible existence of fistulas.

A fistula might also result during abortion procedures other than amnio-instillations. In this case the fistula would result from puncture of the cervix during dilatation. This complication may occur in any trimester, and would be detected by a pathologist upon the discovery of cervical tissue.

2. Delayed Complications.

a. Retained products of conception. This complication is one of the most important causes of abortion morbidity. Grimes & Cates, Jr., *abortion: methods and complications,* in Human Reproduction 796, 806 (1980). This complication occurs most often in D & C and amnio-infusion abortions. *Id.* at 806; Burnhill, *Reducing the Morbidity of Vacuum Aspiration Abortion,* in Pregnancy Termination 146 (1979). If left unremoved, fetal and placental tissue will cause infection and hemorrhage. Walton, *Immediate Morbidity on Large Abortion Service,* 72 N.Y. St. J. Med. 919, 920 (1972); Peterson, *Dilatation and Evacuation:*

Patient Evaluation and Surgival Techniques, in Pregnancy Termination 188 (1979). Submission of tissue extracted by an abortion to a pathologist permits verification of the presence or non-presence of all products of conception.

b. Infection and hemorrhage. These complications can result not only from retained products of conception but also from uterine perforation and from the simple introduction of germs into the womb by the instruments of abortion. A pathological examination would reveal the existence of infection in uterine tissue as well as the presence of excessive amounts of maternal blood.

3. Late complications.

a. Missed ectopic pregnancy. An abortion fails to remove the growing embryo if that embryo is lodged in the woman's Fallopian tube. The woman goes home, thinking she has had an abortion, only to die days or weeks later from a tubal rupture or other complication of ectopic pregnancy. Incidences of ectopic pregnancy have risen since 1970. National Center for Health Statistics, Hospital Discharge Survey Data, 1970-1976 (1972-1978). As a result, the number of deaths resulting from missed ectopic pregnancies is also increasing. Rubin, Cates, Jr., Gold, Rochat & Tyler, Jr., *Fatal Ectopic Pregnancy After Attempted Legal Induced Abortion,* 244 J.A.M.A. 1705 (1980). After citing ten cases in which women died as a result of this complication, the authors of the above article recommended as preventive measures both immediate examination of the tissue by the physician doing the abortion and a report by a pathologist. *Id.* at 1708.

b. Trophoblastic disease. Roughly one in 1500 pregnancies in the U.S. degenerates into an abnormality known as a hydatidaform mole (molar pregnancy). R. Benson, Handbook of Obstetrics and Gynecoloy 278 (7th ed. 1980).

Complications of a mole include infection, hemorrhage, and toxemia (blood poisoning). Merck Manual 921 (13th ed. 1977). The mole may also develop into more serious abnormalities. Chorioadenoma destruens, for example, invades the uterine tissue and "may cause uterine perforation, hemorrhage, and sepsis." *Id.* Choriocarcinoma, a highly malignant and extremely dangerous condition, develops in 2 to 3% of molar pregnancies. *Id.* With proper monitoring and treatment, the prognosis for those conditions is good. If an abortion is performed before the condition is diagnosed, however, proper care will not be taken. A pathology report would remedy this situation by detecting the mole among the products of conception.

Clearly, pathological examinations decrease the maternal risks involved in abortion complications. The report will indicate the absence or incomplete presence of feto-placental tissue, the presence of unintentionally removed maternal tissue, and the existence of injurious or malignant maternal conditions. Knowledge of these unanticipated difficulties is vital to the immediate treatment of potentially serious complications. Thus, the state, by requiring pathological exams after each abortion, significantly furthers its interest in maternal health.